

16r6bioc

1 UNITED STATES DISTRICT COURT
2 SOUTHERN DISTRICT OF NEW YORK
-----x

3 BIOSIG INSTRUMENTS, INC.,

4 Plaintiff,

5 v.

10 CV 7722 (AKH)

6 NAUTILUS, INC.,

7 Defendant.

8 -----x
9 New York, N.Y.
June 27, 2011
3:00 p.m.

10 Before:

11 HON. ALVIN K. HELLERSTEIN,

12 District Judge

13 APPEARANCES

14 BARROWAY TAPAZ

15 Attorneys for Plaintiff

16 BY: PAUL MILCETIC

17 HPM& B

18 Attorneys for Plaintiff

19 BY: JOHN H. BONE

20 KLARQUIST SPARKMAN, LLP

21 Attorneys for Defendant

22 BY: JAMES GERINGER

23 JOHNSON GALLAGHER MAGLIERY, LLC

24 Attorneys for Defendant

25 BY: JOSHUA M. SIVIN

16r6bioc

1 (In open court; case called)

2 THE DEPUTY CLERK: Counsel, state your appearances for
3 the record.

4 MR. MILCETIC: Paul Milcetic of Barroway Topaz on
5 behalf of the plaintiff Biosig.

6 MR. BONE: John Bone on behalf of Biosig.

7 THE COURT: Who is going to be speaking?

8 MR. MILCETIC: Paul Milcetic, your Honor.

9 MR. GERINGER: Jim Geringer from Klarquest Sparkman
10 for Nautilus, your Honor. I will be speaking.

11 MR. SIVIN: Joshua M. Sivin from Johnson Gallagher
12 Magliery for Nautilus, your Honor.

13 THE COURT: So I asked for this as a tutorial to help
14 prepare me for a Markman hearing that will be coming up in a
15 few days. I thank counsel for coming in on short notice and I
16 am at your disposal. I guess Biosig should go first.

17 MR. MILCETIC: Your Honor, before I start -- this is
18 Paul Milcetic again on behalf of Biosig -- maybe I should ask
19 your Honor what you are looking for.

20 THE COURT: Stand up first of all.

21 MR. MILCETIC: Thank you.

22 THE COURT: Bring the microphone closer to you.

23 MR. MILCETIC: All right. Will do. Should I ask?

24 THE COURT: I would like to hear you explain the
25 patent and complain what you think is the novelty of the

16r6bioc

1 patent, why it is worth a patent, and then outline for me some
2 of the terms in the claim that you think will need to be
3 discussed.

4 MR. MILCETIC: Very good, your Honor. So why don't we
5 go through the PowerPoint presentation that we put together.
6 So the '753 patent is the patent that is at issue in this case.
7 It relates to determining accurate heart rate and displaying
8 accurate heart rate on an exercise bike or exercise machine.
9 It can be a StairMaster or bicycle or some type of exercise
10 equipment. It is actually the type of technology that you
11 probably have seen if you go to the gym, such as a treadmill,
12 where you put your hands on the bar and the bar shows you what
13 your heart rate is while you are running or exercising at the
14 time. The novelty of this particular patent is that it not
15 only determines your heart rate, but it does so in a way that
16 is accurate. Particularly the accuracy comes from the fact
17 when you put your hands on the bar, your muscle contracts. How
18 strongly you squeeze the bar or hold the bar may affect the
19 heart rate calculation. At least that was the problem with the
20 prior art. What this patent addresses is determining your
21 heart rate while you're on the exercise bike and doing so in a
22 way that is accurate so that irrespective of how hard you
23 squeeze or how hard your muscles contract, you're going to
24 display an accurate heart rate.

25 So let's go through the claim. There is only one

16r6bioc

1 independent claim in this patent. So a heart rate monitor for
2 use by a user in association with an exercise apparatus. It is
3 there you see on the third slide that you got a bar across the
4 exercise bike and you have a display, which will display your
5 heart rate. You are going to put your hand in between those
6 two electrodes on either side of the handlebar and it will
7 determine your heart rate. I don't think there is an issue as
8 to this particular phrase, heart rate monitor for your use by
9 user. So the first phrase of the only independent claim in the
10 patent, which is where the parties have focused in terms of
11 what they are asking your Honor to construe is a heart rate
12 monitor for use is the preamble and it is the heart rate
13 monitor for use by a user that will read from the patent claim
14 in association with exercise apparatus and/or exercise
15 procedures. I don't think the parties have any dispute,
16 although defendants will have a chance to speak. I don't think
17 there is any dispute as to whether that preamble is included in
18 accused Nautilus products.

19 The next slide, an elongate member. So that is the
20 bar or the bar that is across the front of the exercise machine
21 that measures your heart rate and displays your heart rate. I
22 don't believe that there is any dispute that there is an
23 elongate bar in the accused Nautilus products.

24 THE COURT: So an elongate bar is simply a horizontal
25 bar?

16r6bioc

1 MR. MILCETIC: Or an elongated bar. Actually in
2 Nautilus products it is more curved. It is not just straight
3 or horizontal.

4 THE COURT: Elongated means stretched?

5 MR. MILCETIC: Stretched, agreed.

6 The next element is electronic circuitry. You are
7 getting this very quickly. Electronic circuitry, including a
8 different amplifier, having a first input terminal and second
9 input terminal. This is the circuitry that is within the
10 exercise machine and what it is designed to do is to filter out
11 the information that comes from how hard you squeeze the bar so
12 that all that is left over is the machine measuring your heart
13 rate. That is done through an electrical circuit or signal
14 processing. I don't believe there is any difference, that
15 there is any dispute about whether there is a different
16 amplifier to the accused product. It is essentially a circuit
17 that adds or subtracts signals that are inputted into the
18 circuit.

19 The next slide. The next element is said elongate
20 member comprising the first half and second half. So what that
21 requires is that there be two parts to this what you refer to
22 as an elongated bar, a stretched bar. There is one part and
23 another part. There is a part that you put one hand on, the
24 left hand, and there is another part that you put the right
25 hand on.

16r6bioc

1 THE COURT: Therefore any differential can be
2 detected.

3 MR. MILCETIC: Correct.

4 THE COURT: Smart.

5 MR. MILCETIC: Correct.

6 I don't believe there is a dispute, again Nautilus is
7 going to correct me perhaps, as to whether the elongate member
8 is in the accused product. I believe that both sides agree on
9 that.

10 The next element is a first live electrode and a first
11 common electrode mounted on the first half in spaced
12 relationship with each other. So what that is there are two
13 electrodes. There is two materials that will pick up
14 electrical signals from your hand on the first half and the
15 same thing is true on the second half. So you can see on that
16 screen. What you do is put your hands in the middle of those
17 two electrodes and there is a spaced relationship, meaning
18 there is space in between. What that space is designed to do
19 is through experimentation and through sort of trial and error
20 you can determine a way of spacing them in such a way so that
21 the amount that you squeeze and the amount that you use your
22 muscles won't affect the heart rate calculation. So space
23 relationship just means there is a particular space in between
24 those two from our speculative. I think there is a dispute
25 about this and you will hear from Nautilus on this. There is a

16r6bioc

1 space in between those two electrodes that you put your left
2 hand on. That is the first half.

3 The next slide is a second live electrode and the
4 second common electrode mounted on said second half in spaced
5 relationship with each other. Same thing as the other side.
6 You put your right hand on the other side of the handle of the
7 bike and there is a spaced relationship between those two
8 electrodes as well. Again, I think there a dispute between the
9 parties as to what spaced relationship requires. From our
10 perspective, it is the plain meaning. There is a particular
11 amount of space between the two that is designed to again to
12 prevent the amount that you squeeze from causing an error in
13 heart rate calculation.

14 The next slide first and second common electrodes
15 being connected to each other and to a point of common
16 potential. So basically what this means is that the two
17 interelectrodes from a circuitry standpoint are connected to a
18 ground. I don't think there is any dispute that that is in the
19 accused product. Again, if there is a disagreement I am sure
20 you will hear about it.

21 The next one is that first live electrode being
22 connected to said first terminal of said different amplifier
23 and said second live electrode being connected to said second
24 terminal of said different amplifier. So what this is doing is
25 you are connecting to an amplifier, to a circuit both the outer

16r6bioc

1 electrode that we talked about, one on the left and one on the
2 right, the outer electrodes, and what you are doing is you are
3 connecting it to a different amplifier which is essentially
4 adding these two signals together to make sure that they come
5 out to be zero and the reason you want to make them come out to
6 be zero when you are talking about the electromyogram signal is
7 that you want the parts of the signal that relate to how strong
8 you hold the handlebar to cancel out so that all that is left
9 is the part of the signal that measures your heart rate. That
10 is basically the idea. So you have a connection to this
11 particular circuit which adds and subtracts. I don't think
12 there will be a dispute about that.

13 A display device disposed on said elongated member.
14 This is what shows your heart rate. If you have a bar or
15 stretched out element, there is a display that shows what your
16 heart rate is essentially when you are exercising on the
17 machine. That is what the display is.

18 So wherein said elongate member is held by said user
19 with one hand of the user on said first half contacting with
20 said first live electrode and said first common electrode. So
21 when you hold it with your left hand, you are contacting both
22 electrodes on the left side. Again, there is a space between
23 the two electrodes on the left side. And said first common and
24 second -- first common electrode and with the other hand of the
25 user on said second half contacting said second live electrode

16r6bioc

1 which was a second common electrode. So you do the same thing
2 on the other side. I think there is a dispute here about this
3 issue.

4 So what we would say is this a system claim, this is
5 an apparatus claim which means that the function of that bar is
6 that you hold it in those places. Again, if you don't
7 understand something just speak up. But basically what we're
8 saying there are two electrodes on either side and hold it in
9 the middle. That is what the function is. What the defendants
10 I think are saying is that a person actually has to be holding
11 this, both sides, before there is infringement. And the reason
12 we disagree with that is because this is an apparatus. In
13 other words, the way that you patent an invention is you cover
14 the component and you talk about what is the function of these
15 components as opposed to saying that it is actually -- that
16 somebody actually has to be standing there before you infringe.
17 The reason I think the defendants are doing this is because
18 there is a part of the patent law, direct infringement versus
19 indirect infringement, where to show indirect infringement you
20 have to prove that you induced somebody to do this, whereas
21 direct infringement happens when you just make the seller use
22 the product. If the Court interprets this in such a way that
23 someone has to be standing there there is no infringement until
24 someone is standing there, which means I think where the
25 defendants are going with this is to say, Well, there is no

16r6bioc

1 infringement until you induced, you caused somebody to do that
2 as opposed to what we would say is, Whenever you sell that
3 since the function is that people will put their hands there
4 whenever you sell that you infringe. So I think that could be
5 a potential disagreement between the parties.

6 THE COURT: Not necessarily in the definition.

7 MR. MILCETIC: Well --

8 THE COURT: We'll see.

9 MR. MILCETIC: I think their definition is there is
10 somebody there actually holding basically. But you are right
11 that there is no difference in terms of technical meanings or
12 anything along those lines. Both parties agree that the point
13 is you stand there and hold it.

14 The next element is whereby a first electromyogram
15 signal will be detected between first --

16 THE COURT: You are swallowing your words.

17 MR. MILCETIC: I am sorry.

18 THE COURT: The word you are missing, Jennifer, is
19 electromyogram.

20 MR. MILCETIC: The next element is: Whereby a first
21 electromyogram signal will be detected between said first live
22 electrode and said first common electrode and a second myogram
23 signal of substantially equal magnitude and phase to said first
24 electrode signal will be detected between said second live
25 electrode and said second common electrode. What this is

16r6bioc

1 saying is you are holding your hands on both sides and in terms
2 of what electrical engineers call magnitude and phase, the
3 signal is essentially the same. It is going to be the same
4 from the right and the same from the left in terms of magnitude
5 and phase. What that means is when that signal goes through
6 the differential amplifier and it is subtracted since both
7 numbers are the same, it is going to wind up zero more less
8 which means that the electromyogram signal, the signal that
9 refers to how strong you are holding that bar is not going to
10 impact. It is not going to be noise that impacts the system's
11 calculation of your heart rate, which is the point of the
12 invention.

13 There are a couple of issues that the defendants have
14 raised here with this element?

15 THE COURT: Let's not worry now so much about the
16 definitional -- I am trying to say cute words -- the
17 differential of the interpretation.

18 MR. MILCETIC: Okay.

19 THE COURT: The interpretive differential.

20 What you are doing now is you want to have some kind
21 of a measurement and build some kind of device capable of such
22 measurement to allow a person who is actively exercising
23 through some kind of gym machine to know what his heart rate is
24 and thereby not to allow it to go over a certain level
25 considered safe or appropriate exercise goal. What you are

16r6bioc

1 doing is measuring the pulse rate that flows through the
2 members of the body and putting it into a machine. But since
3 you are getting in general how people are different pulse rates
4 depending where you are putting a hand on a bar and between
5 both hands you have to figure out some way to detect the
6 differential and cancel it and the patent I assume is this
7 method of detecting the differential and cancelling it.

8 MR. MILCETIC: I agree except that it is not a method.
9 It is a system of components but that is correct. In patent
10 law we make a difference between methods and systems but that
11 is correct.

12 THE COURT: So ultimately this claim has to teach
13 someone skilled in the trade to make something like that?

14 MR. MILCETIC: Yes.

15 THE COURT: If doesn't teach them how to do it, it is
16 not a good patent. If it does and it meets the requirement of
17 novelty, it is a good patent.

18 MR. MILCETIC: That is correct. If it is novel and it
19 teaches one of ordinary skill in the art how to build one of
20 these things than it is a good patent. If it doesn't meet the
21 requirements of 35, U.S.C., section 112 or 102 then it is not a
22 good patent.

23 THE COURT: So now we can listen to your adversary.

24 MR. GERINGER: Thank you, your Honor. Jim Geringer
25 for Nautilus. One point, if we can get my slide up, your Honor

16r6bioc

1 just raised was if it enables. Several years ago the first
2 time this case was before the Court, my predecessor sought a
3 summary judgment motion and they said it does not enable.

4 THE COURT: It what?

5 MR. GERINGER: You cannot get these equal signals.

6 THE COURT: Not what?

7 MR. GERINGER: Not enabled. It will not teach
8 somebody how to build this so that you can get these perfectly
9 equal signals or so equal that they zero out because there is
10 chaos going on on the palms and the electric signals and
11 muscles and it is very hard to get equal. That is what we
12 briefed and Biosig submitted an expert declaration that said
13 basically Dr. Galiana from McGill University in Toronto said I
14 gave Figures 1 and 2 of the patent to my graduate assistant and
15 he built it in two hours.

16 Now, on the screens here we see it is a really three
17 heart monitor devices, your Honor, because the patent needs to
18 be understood in context because of the reexamination they
19 distinguished the monitor that is on the right. So the monitor
20 that is on the right has two electrodes just like two pairs of
21 two electrodes.

22 THE COURT: Two things on the right, Figure 1.

23 MR. GERINGER: Figure 1, we call it Fujisaki. This is
24 much earlier, more than a decade before the patent is filed.
25 And he has two electrodes on a bar with a space in between.

16r6bioc

1 Two of those electrodes are live going to a dif amp and two of
2 those electrodes go to the ground. It is wired and built just
3 like the basics of what was just described.

4 Now, the next slide, your Honor, is what they told
5 this Court demonstrated the invention and they built it and
6 they told the Court, Here is what my grad student can put
7 together in two hours. And those gold bands there, the cooper
8 bands, those are those electrodes, on the left and on the
9 right. Each has a pair and on the left and the right each goes
10 to -- one signal goes to the end of the dif amp and one signal
11 goes into the -- the differential amplifier, I am sorry, your
12 Honor. I will start over.

13 THE COURT: The dif amp is the differential amplifier?

14 MR. GERINGER: Yes.

15 THE COURT: "Dif" meaning differential?

16 MR. GERINGER: Yes.

17 THE COURT: What is the differential, between what and
18 what?

19 MR. GERINGER: It is the different between the heart
20 signal, because the heart signal is on your left side your body
21 so it has a different polarity. I can describe it to your
22 Honor in this way: What a differential amplifier would do is
23 take the -- I have the definition right here on the screen --
24 it will amplify the difference. That is why we call it a
25 differential amplifier.

16r6bioc

1 So a heart signal has a asymmetry to it, left and
2 right. You will have opposite polarities on each side. So Dif
3 amp will take that difference and add it. So if I had
4 Dr. Galiana, as an example, for Biosig back then I have signal
5 one M 1 plus noise. Signal 2, M 2 plus noise. M 1 is the
6 opposite of M 2. So the dif amp adds M 1 and M 2, subtracks M
7 minus M. The concept is add things that are different,
8 subtract things that are the same. If muscle is the same on
9 each side, it gets subtracted out. The heart being different
10 on each side, gets added up. So this weak heart signal that
11 filters out to the hands, it gets amplified because it is
12 different on each palm, and the muscle signals, which are
13 theoretically according to the claim, the same on each side
14 gets subtracted at zero.

15 But before you think I am arguing for plaintiffs, I
16 want to return to this point: They said when first sued Biosig
17 said, This is easy to build. Nautilus says you cannot build
18 it. We did in two hours. Look how they built it. They took a
19 fat strips of cooper narrowly separated and put them on a metal
20 dowel.

21 THE COURT: Is this what I have to deal with in the
22 Markman hearing.?

23 MR. GERINGER: Yes. Because in the reexamination
24 hearing, in the reexamination process, we showed that first
25 Fujisaki monitored the Patent Office. As you can see, your

16r6bioc

1 Honor, it is very similar. It has two pairs of electrodes, two
2 going to a dif amp, two go to ground. So it does the same
3 thing and that patent, which is presumed valid, same
4 presumption that their patent gets, that patent describes why.

5 I will be happy to hand this up. It is the Fujisaki
6 patent. Each of the grips composed of two cylindrical
7 electrodes. The electrical circuit includes a differential
8 amplify having input from those grip centers for amplifying the
9 difference between the heart pulse and when a person grips the
10 left and right hand grips, preferably the palms covering the
11 sensors, you filter out, it says, AC hum and human body hum.
12 Those are noises. If you are standing on the machine and it is
13 plugged in, there is a 60 Hz cycle from being plugged in.
14 Well, that will come through both left and right through the
15 exerciser. It gets canceled out in the dif amp.

16 The heart remembers what you are trying to amplify,
17 the muscles are trying to subtract. That Fujisaki did the same
18 thing the same way and when they got to reexam, your Honor,
19 they had to distinguish it. When they distinguished it, they
20 threw the baby out with the bath water because they
21 distinguished their--

22 THE COURT: Mr. Geringer, I am sure at some point I am
23 going to be listening to this. It is not going to help you at
24 the Markman hearing. Skip it.

25 MR. GERINGER: I understand, your Honor. If your

16r6bioc

1 Honor would like me to skip --

2 THE COURT: You are telling me about the prior art. I
3 already know about the prior art.

4 MR. GERINGER: Your Honor, the only reason I think --

5 THE COURT: Before Biosig came around with its
6 machine, if I was riding on an exercise bike and put both hands
7 down, could there be a monitor?

8 MR. GERINGER: Yes.

9 THE COURT: What is novel claims for this? What
10 according to the claim is novel? Forget whether or not the
11 claim can stand up. What does the claim say about itself as a
12 novelty?

13 MR. GERINGER: As articulated in the reexam, your
14 Honor, what is novel is that it has prebalancing so that any
15 one can grip it with any kind of squeezing and it will always
16 stay balanced. It is prebalanced. That is what they said.
17 The configuration of these electrodes is what they said the
18 heart of the invention. They call that the present inventive
19 concept. This preconfiguration balancing these electrodes so
20 you always get that cancelling. That is what they said was
21 novel. They said it wasn't in that piece of prior art because
22 the reexam is all about describing how you are novel over this
23 prior art. So I have from both sides, if I understand what
24 goes on, a chart, the claim language that is to be construed is
25 set out on the left, the precise words for construction being

16r6bioc

1 in bold, otherwise the rest of the sentence is in plain type,
2 and then I have the proposed construction by Nautilus and then
3 the proposed construction by Biosig.

4 Have you folks gotten together to see if you can come
5 to agreement on some of these disputes?

6 MR. GERINGER: We continue to constantly discuss this,
7 your Honor. We've come to a lot of agreement and we'll
8 continue discussing it. We have a good relationship with
9 plaintiff's counsel in the sense that while we disagree on the
10 conclusions, we're trying to reach as much agreement as
11 possible.

12 MR. MILCETIC: Your Honor, I personally agreed on
13 this. Maybe we can set a date. After this we just can't agree
14 on anything further. Maybe that makes sense.

15 THE COURT: When is the Markman hearing.

16 MR. GERINGER: July 5th. My conversations were
17 primarily with Mr. Milcetic's co-counsel, his colleagues. We
18 think we reached as much agreement as we can. One can see, for
19 example, in the black square boxes, we think those are the most
20 critical areas of disagreement. On the left there are some
21 terms that are in boxes.

22 MR. MILCETIC: I think it is worth one week to confer
23 and try to narrow our differences if we can.

24 MR. GERINGER: We would be happy to do that.

25 THE COURT: There is a certain time when it is not

16r6bioc

1 productive. But, for example, looking at a differential
2 amplifier and the agreed language is rotten stilted, you can do
3 better. You are not writing for a patent examiner; you are
4 writing for me. I am not a patent lawyer. I know that
5 differential amplifiers are on the market.

6 MR. GERINGER: May I ask, your Honor, if what is up on
7 the slide now is the English definition for the first line,
8 first bullet point only.

9 THE COURT: It seemed to be the way to define it. A
10 differential amplifier modifies and amplifies the difference
11 between two signals.

12 MR. MILCETIC: Yes.

13 MR. GERINGER: The parties agree on that.

14 MR. MILCETIC: Yes.

15 MR. GERINGER: We'll incorporate that, your Honor.

16 Your Honor, the first blacked box really is where the
17 rubber starts meeting the road and we're not trying to do the
18 Markman hearing today I know, but as far as tutorial goes any
19 explanation of why spaced relationship might matter, why -- in
20 some of my slides, your Honor, I was ready and willing to go
21 through the idea of how the heart wave, what the heart wave
22 looks like and what is being detected here and how you
23 calculate the pulse.

24 THE COURT: That is worthwhile.

25 MR. GERINGER: May I? If we start on this slide, your

16r6bioc

1 Honor, this is a page from Biosig's expert report so I propose
2 it --

3 THE COURT: Before you do is that, looking at this
4 spaced relationship.

5 MR. GERINGER: Yes.

6 THE COURT: There is no problem with live electrode.
7 No problem with common electrode.

8 MR. GERINGER: Yes, your Honor.

9 THE COURT: Speak too quickly. The two common
10 electrodes are connected to each other and to a point of common
11 potential such as ground. What does common potential mean?

12 MR. GERINGER: Same chart, your Honor. So, for
13 example, if both Mr. Milcetic and I touch the same person, we
14 have a common potential with static electricity. We might be
15 given a shock at first but at that point we both have common
16 potential. It is not necessarily true ground if we both
17 touched the same thing then it is the common thing that gives
18 us the common potential.

19 Would you agree, Mr. Milcetic?

20 MR. MILCETIC: Yes.

21 MR. GERINGER: Ground is zero, zero, zero. So we all
22 know when we jump a car battery or work on electricity, you
23 want to make sure what ground is.

24 THE COURT: So it is a point of common preference?

25 MR. GERINGER: Yes, your Honor.

16r6bioc

1 So the next thing, spaced relationship, what is going
2 to happen in the briefing is the parties are going to focus a
3 lot on what was said in the reexam about spaced relationship.
4 But returning to how this works, your Honor, up on the screen I
5 have the heart wave.

6 THE COURT: Yes.

7 MR. GERINGER: So what is being measured here isn't
8 actually blood pressure. If you take your pulse at your wrist,
9 you are actually feeling fluid flow. You are feeling pressure
10 that comes out from the heart. A little before that fluid flow
11 there is an electric pulse. It has this shape and they call it
12 the PQRST for characteristics of this shape. What these heart
13 rate monitors are trying to do when they measure the electric
14 pulses is trying to catch that R wave. They are trying to
15 catch it because if you have one R wave every second, you would
16 have 60 beats a minute and your pulse would be 60. If you had
17 two per second, it would be 120, hopefully actively exercising
18 at that point.

19 This is just a blowup of that, what they call QRS
20 complex. Nothing here needs to be understood to deep level of
21 technical detail because the parties both agree we're trying to
22 pick out the R wave. Now, the heart wave, and we can think of
23 the fancy word, ECG, the heart wave is timed as I said by the
24 number of beats per minute and this again from their -- this is
25 not from their report. It is from a book earlier, 1988, that

16r6bioc

1 describes a lot of different ways of calculating heart wave.

2 This is one divided by 60.

3 Now, muscle noise is represented here in red and if
4 you see that R wave now, it looks kind of hidden, again this is
5 from Biosig's expert report. I only present it so we're all on
6 the same page. The idea here behind the patent and what is
7 behind Fujisaki and the reexam we discussed a lot is how do we
8 flush that R wave out.

9 THE COURT: So if you take your pulse at the wrist
10 where the vein comes very close to the skin, you can feel the
11 pulse?

12 MR. GERINGER: Yes, your Honor.

13 THE COURT: If you try to take it in your middle
14 finger, it is hard to find the pulse?

15 MR. GERINGER: Correct, your Honor, but that is
16 pressure under that fluid flow. There is something similar
17 about electronics, though. Because electric signals have to
18 travel a long way from the heart to the fingers. So if you
19 really wanted an accurate heartbeat electrically, you might put
20 it closer to the heart. So part of the idea here, and this is
21 their commercial product, your Honor, is that you could grab it
22 and my heartbeat is way too high because I am in open court
23 arguing. But live common or maybe it is live common, I don't
24 know how they wired these two, but if I have just one hand,
25 nothing. One hand nothing. Two hands, readout.

16r6bioc

1 Fujisaki worked we said the same. So in the Markman
2 we're going to be talking not about disagreeing about the basic
3 way differential amplifier sorts this out. We'll be talking
4 about this critical spaced relationship. They said the spaced
5 relationship is critical. Fujisaki will not work in all
6 conditions they said. Our invention will because our intention
7 especially understands that spaced relationship.

8 THE COURT: There is a lot of pressure on defining
9 spaced relationship.

10 MR. GERINGER: Yes, your Honor.

11 THE COURT: So the relationship defined by the
12 relationship between the measurement between one point and
13 another point.

14 MR. GERINGER: We say so, your Honor. Biosig will
15 have to answer. I am looking for a big picture, but on the
16 parties' joint chart, page 2, I have a small excerpt of a
17 figure from the patent in which I show, yes, it is the width of
18 the band and the width of the gap in between and the reexam we
19 will argue that they said certain things. I am not trying to
20 make the argument today. I am saying there were arguments
21 about how far you space them and how fat you make the
22 electrodes. Also, are they going to be rings? Are they going
23 to be plates? You might go to a gym, see a machine, it doesn't
24 have rings, it might just have plates. I will show your Honor
25 an example of an accused product.

16r6bioc

1 Again, this is not for construction, your Honor. It
2 is merely for you to understand what the parties are disputing.
3 The picture up on the screen is --

4 THE COURT: Biosig wants to talk not about lineal
5 relationship but a geometric relationship. So, Mr. Milcetic,
6 why should geometric be introduced here if it is not in the
7 claim itself?

8 MR. MILCETIC: Geometric should be introduced --

9 THE COURT: It means geometric relationship.

10 MR. MILCETIC: We're trying to say the plain meaning
11 here.

12 THE COURT: But geometric is not part of the plain
13 meaning of the claim so why do you want to add that word?

14 MR. MILCETIC: We don't have to.

15 THE COURT: I can think of at least two relationships.
16 Maybe there are more. There is a lineal relationship and there
17 is a geometric relationship.

18 MR. MILCETIC: I think when we said geometric we were
19 just thinking space from algebra, axis and in space. There is
20 a spacial relationship between two electrodes. That is all.

21 THE COURT: Why is it geometric rather than lineal?
22 There is also a measurement putting a straight line to a curved
23 line.

24 MR. MILCETIC: Yeah. Well, I think lineal is okay. I
25 don't think we have a problem with that. Our position is

16r6bioc

1 basically the plain meaning.

2 THE COURT: So what you want to say is space
3 relationship is a relationship according to a measured distance
4 between two points.

5 MR. MILCETIC: That's fine with us.

6 MR. GERINGER: That's also fine for Nautilus, your
7 Honor.

8 THE COURT: That is much simpler.

9 MR. GERINGER: To be clear, your Honor, it is the
10 width of the pass and the width of the space between them and
11 the width, just to use this as an example, the width of an
12 electrode and space between.

13 THE COURT: So it is a relationship measured according
14 to distance between two points?

15 MR. GERINGER: Yes, your Honor.

16 MR. MILCETIC: That's exactly correct.

17 THE COURT: That's a spaced relationship. So the live
18 electrode, the first live electrode and first common electrode
19 have a certain distance between them and the second live and
20 second common electrodes have another distance between them.

21 MR. GERINGER: Correct, your Honor. That can be
22 symmetrical or not.

23 THE COURT: We don't know.

24 MR. GERINGER: Correct.

25 THE COURT: So that will be the definition.

16r6bioc

1 MR. GERINGER: That's fine, your Honor.

2 MR. MILCETIC: That is fine with Biosig, your Honor.

3 MR. GERINGER: Your Honor, if I may move to another
4 simple term. On page 4 of the parties' chart it says, Where --

5 THE COURT: I don't have it.

6 MR. GERINGER: There is a footer in very small print.

7 THE COURT: Got it.

8 MR. GERINGER: It says, Where elongate member is held,
9 here we really should be able to come to agreement, but there
10 is a disagreement underlying it. Everyone seems to want to say
11 held is held. If you made contact, you are holding it. The
12 reexam is going on and on about what kind of hold? Are you
13 gripping? Are you relaxed? Are you tight?

14 THE COURT: There is nothing in the claim that talks
15 about that.

16 MR. GERINGER: We certainly agree with that, your
17 Honor.

18 THE COURT: It is held enough so you can make a
19 measurment. So we have elongate member.

20 MR. GERINGER: A lengthened member, a stretched out
21 member I believe your Honor suggested. Stretched out.

22 MR. MILCETIC: That would be fine with Biosig, your
23 Honor.

24 THE COURT: Such as a rod?

25 MR. GERINGER: Correct, your Honor. To be clear in

16r6bioc

1 the prior case they sued Kliner bikes which had --

2 THE COURT: What this a prior case?

3 MR. GERINGER: Your Honor, this suit was originally
4 filed in 2004 and it was before your Honor. There was some
5 motion practice and then we found the Fujisaki patent. We went
6 to the Patent Office and said, Please reexam it. And when they
7 said they would, we came to your Honor jointly and said, Will
8 your Honor please stay the Biosig v. Nautilus case pending the
9 Patent Office reexamination. Your Honor said, I will not stay
10 it, but I will dismiss it and let you toll statute of
11 limitations. So that is what the parties did. We considered
12 this Biosig two. And when I say the prior case, I mean that
13 Biosig one case.

14 THE COURT: It is a case which I received from Judge
15 Owen. Let's go back to the elongate member.

16 MR. GERINGER: So that is a long member. It would not
17 be -- for example, we had previously been accused of like you
18 sit back on these recliner bikes in a gym, if I had electrodes
19 on both arms of my chair, I wouldn't call that on the same
20 elongate member, but my understanding is that is no longer
being accused so I don't think we'll have --

22 THE COURT: So it is something like a situation where
23 the user puts his left hand on the left-hand side of electrodes
24 and his right on his right-hand side of the electrodes holding
25 each.

16r6bioc

1 MR. GERINGER: That is the elongated member.

2 THE COURT: That is what we'll do. I think you folks
3 can give another try at this using the definitions here.

4 MR. GERINGER: We'll do that. Would you like us to
5 submit another joint chart?

6 THE COURT: I would.

7 MR. GERINGER: We'll do that before the hearing.

8 THE COURT: Yes.

9 MR. GERINGER: To confirm, your Honor, we asked for
10 two extra days for briefing. I will be flying back tonight and
11 we're going to get into the briefing.

12 THE COURT: We'll go off the record.

13 (Discussion off the record)

14 MR. GERINGER: This accused product that I show on the
15 screen, it is very important that accused products are never
16 used to construe the claims. That is true. The Circuit has
17 been clear that you can take a peek to understand what the
18 parties are fighting about. So, for example, these aren't
19 rings and you see how they are spaced.

20 THE COURT: I am not helped by this.

21 MR. GERINGER: Then let me go back to the chart and
22 look for another term to simplify, your Honor.

23 THE COURT: There is a rod. It doesn't make that rod
24 is broken by space or another object or whatever.

25 MR. GERINGER: Elongated member is a good, clear

16r6bioc

1 example, your Honor. We don't have a problem with that. I
2 wouldn't dispute that.

3 THE COURT: Let's go to page 5.

4 MR. GERINGER: On page 5 the black box term is maybe
5 the most central term the parties will be debating.

6 THE COURT: Let's be clear on electromyogram. It is
7 an electrical signal produced by muscles other than the heart.

8 MR. GERINGER: Yes.

9 THE COURT: Electrocardiograph is an electrical signal
10 produced by the heart.

11 MR. GERINGER: Yes, your Honor.

12 THE COURT: So what this patent has to do is take a
13 differential of one from another, am I right?

14 MR. GERINGER: Charge is important. Muscle has same
15 chargeable signs, heart opposite. The differential amplifier
16 will subtract the same charges but add opposite charges. So
17 the heart is special because the heart is not symmetric. The
18 heart is on the left. And just the way biology works, they say
19 opposite polarity. So I don't get equal heart signals in my
20 right and left hand. The other muscles, they say they will
21 detect equal heart signals. That is what this claim is about.

22 THE COURT: What the biology, one ventricle is
23 positive and another is negative?

24 MR. GERINGER: I think it is because it is on the
25 left. Do you know?

16r6bioc

1 MR. MILCETIC: I think that is right.

2 MR. GERINGER: I think it is the asymmetry of the
3 body. If I had somebody with a heart rate in the middle, in
4 theory I wouldn't set up those competing electric fields. Like
5 I think if I squeezed one hand, that is not symmetric now
6 either.

7 THE COURT: So is it an oscillating value?

8 MR. GERINGER: I think so. This wave we showed, let
9 me show a closeup. This is the closeup.

10 THE COURT: Yes.

11 MR. GERINGER: That is the same wave now six times.
12 So this is this complex wave six times.

13 THE COURT: If you look at the line across, some
14 values are above and some are below.

15 MR. GERINGER: I don't know why that is. I don't know
16 that is a zero axis, your Honor. It certainly is showing you
17 that chart that similar things are going up and things are
18 going down. The electric charge flowing out of the heart is a
19 rollercoaster ride and that is up and down.

20 THE COURT: In other words, what you are saying though
21 is that since the signal of the heart is plus and minus and the
22 signal of the muscles is plus and steady, you take an average
23 of the muscle signal and you add the heart signal and you
24 subtract the average against the sum.

25 MR. GERINGER: Can I try that?

16r6bioc

1 THE COURT: Yes. It not very good.

2 MR. GERINGER: Let me try it. What is happening is
3 you are taking the heart signal as it is detected in the palms
4 and because that is going to be opposite polarity is the word
5 but opposite charge, it will get added. Opposite charge
6 signals will be added because muscle of the same charge, they
7 will be substracted if they are the same. Anything similar,
8 anything that is the same will be substracted. Anything that
9 is different will be added.

10 See, that is key because, for example, when Biosig was
11 explaining before they kept saying, while exercising, while
12 exercising. We don't know frankly why they leave in the "while
13 exercising" in this claim. But while exercising there is a lot
14 of activity in the hands and people's hands can move. So
15 assuming equality, assuming identity between those two hands,
16 muscle signals, is an assumption.

17 Nature doesn't mandate that. Nature mandates that
18 your heart will have opposite polarities. Nature doesn't
19 mandate that your hands are given off equal signals. And in
20 the first case, in fact there was a motion brought saying you
21 can't ever find really equal signals because there is too much
22 chaos going on, and the parties will debate that.

23 THE COURT: Okay.

24 MR. MILCETIC: Your Honor, you can jump in, but the
25 differential amplifier recently subtracts. It basically

16r6bioc

1 subtracts. So if you have two positive numbers, five and five,
2 and you subtract that is your muscle signal. Five minus five
3 is zero. That is what the claim says you want. You want the
4 muscle squeezing and the effect of the muscle signal to have no
5 impact on the heart rate calculation. As he pointed out, the
6 cardiac signal because it is opposite, because it is a negative
7 five and a five were not subtracted which would give it
8 negative 10.

9 MR. GERINGER: Positive 10.

10 MR. MILCETIC: So it is amplified. The point is it is
11 not zero, which is what you want. You want the cardiac signal,
12 your pulse rate, to be determined without that noise that comes
13 from the muscle signal. That is essentially what he is talking
14 about.

15 MR. GERINGER: So, your Honor, not to pretend to be
16 scientifically accurate here but to give you the sense of the
17 scale, the muscle might be five on a scale of like five and the
18 heart might be on a scale of point five. So point five minus
19 negative point five, I am up to one. Five minus five, I am
20 down to zero. Suddenly point five stands out whereas before
21 the five is passing.

22 This term that is in the square box here, the
23 "whereby," basically comes down and says two equal muscle
24 signals will be detected at the differential amplifier at the
25 input. In the diagram here that comes from the patent, the

16r6bioc

1 diagram below, it shows the boxes and the drawing on the
2 bottom, Figure II, the boxes at the top, No. 9, 11, 15 and 13,
3 those correspond to the electrodes shown in this commercial
4 embodiment in my hand. So 9 and 13 --

5 THE COURT: Equality is not part of the claim.

6 MR. GERINGER: It is part of the claim.

7 THE COURT: Oh, it is.

8 MR. GERINGER: It is in this element.

9 MR. MILCETIC: It is.

10 MR. GERINGER: It says substantially equal magnitude
11 and phase.

12 THE COURT: That is a phenomena of the human body. It
13 is not produced by the intention. It is produced by natural --

14 MR. GERINGER: Yes, your Honor. They are trying to
15 detect the equal signals from the human body. Not create them,
16 detect them.

17 THE COURT: Okay.

18 MR. GERINGER: Your Honor, magnitude and phase, would
19 your Honor like us to explain?

20 THE COURT: Yes.

21 MR. GERINGER: Magnitude size. Phase, if your Honor
22 remembers, sign waves or cosign waves, a phase, if I am not at
23 the ocean, I am at Jones Beach and a see a wave come from troth
24 to troth, that is a period from peak to peak. That is a
25 period. So phase if two waves are in the same phase, they

16r6bioc

1 build each other one. If two waves are sign and postsign out
2 of phase, they kind of cancel each other down. Remember that
3 minus the negative turns into a positive. If my muscle signals
4 are out of phase, they don't cancel out. They add up. Big
5 noise becomes bigger noise. So phase is very important for the
6 cancelling.

7 Anything else on the whereby two equal signals
8 element?

9 THE COURT: No. When you have the agreed boxes is
10 that all that I need for the definition, or is it only part?

11 MR. GERINGER: It is only part, your Honor. it is the
12 agreed part, your Honor. Generally though we segregated out a
13 term that we can agree on entirely.

14 THE COURT: I think you folks can do better. Get your
15 same definition into the unagreed part.

16 MR. MILCETIC: We'll work on it, yes.

17 THE COURT: Let me give you my philosophy of the
18 Markman. It is to help me decide the real issues. It is not
19 to get an advance from one side or the other. The most
20 successful Markman hearing will be to interpret the patent in a
21 simplified way to give each of you room to make your arguments
22 on the substance. So I am not looking to give either side an
23 edge. I am not looking to make a dispositive ruling on the
24 claim either. That will come in the next phase. A successful
25 Markman hearing will make all our lives simpler.

16r6bioc

1 MR. GERINGER: Thank you, your Honor.

2 THE COURT: I think that is really important.

3 MR. GERINGER: Yes. Let me presage how simple what we
4 think we will be arguing. We think it is as simple lineal
5 spaced relationship that they say -- sorry. If you look at the
6 figure that is up there, they say the electrodes have to be
7 thinner than the gap between. They say that doesn't have to be
8 the case. That is the perfect example. Nautilus will say,
9 There has to be a fat middle part, the spacing between has to
10 be fatter than the actual electrode width and Biosig will say,
11 No such limitations or can be any spaced relationship.

12 THE COURT: If it helps you can also add a simple
13 contention to the definition so it becomes clear what you each
14 argue substantively.

15 MR. MILCETIC: That's fine.

16 THE COURT: That will also help the definition. The
17 goal is not to have a fight over the definition. The goal is
18 to make it as simple and clear as possible.

19 MR. MILCETIC: We would be fine with your Honor's
20 definition, which is the distance between two points.

21 THE COURT: So we've already accomplished that.

22 Now we're stuck with electromyogram signal
23 electromechanical signal. If we are talking about
24 electromyogram it is the signal from the heart. What is
25 electomechanics?

16r6bioc

1 MR. MILCETIC: Myogram is the muscle signal.

2 THE COURT: Reversed.

3 MR. MILCETIC: Cardiogram is the heart.

4 THE COURT: What you want to do is measure each
5 dampening the effects of muscle signals and accentuating the
6 effects of the heart signals in order to make a clear
7 differential meaning.

8 MR. GERINGER: Yes, your Honor. Dampen the muscle,
9 accentuate the heart.

10 MR. MILCETIC: Both parties agree on that.

11 MR. GERINGER: May I make a point?

12 THE COURT: Yes.

13 MR. GERINGER: There are a lot of ways to calculate a
14 heart signal, a lot of ways to get a heart signal, a lot of
15 ways to do it with a differential amplifier. We are going to
16 be arguing that they do it in a specific way and when they
17 distinguish other devices that had two pairs of electrodes and
18 differential amplifier to dampen the muscle and accentuate the
19 heart, they said, ah, but we do it in a different way. So it
20 is not just dampening the muscle and accentuating the heart, it
21 is whether we will contend that they said they do that in this
22 particular way.

23 THE COURT: So there has to be something in the claim
24 that says that?

25 MR. GERINGER: Yes, your Honor, or in the file

16r6bioc

1 history. Because of course a patentee can clarify what they
2 mean in the file history.

3 A very important thing will happen here, your Honor.
4 If during the reexam they change the scope of the claim, they
5 didn't change any of the literal world, they changed the scope,
6 13 years of alleged damages and discovery will disappear. They
7 filed in 2004, six-year statute of limitations. They were
8 claiming damages from 1998. If in reexam the patentee is
9 forced to change the substance of the claim if it is not
10 substantially identical when it gets out, everything before the
11 reissue disappears.

12 THE COURT: I don't know where that comes in in the
13 Markman hearing.

14 MR. GERINGER: Because as a matter of law you are also
15 looking at the claim before.

16 THE COURT: What you want to do is part of the
17 definitions is no note the change, if any, but there will be a
18 lot of tension in that?

19 MR. GERINGER: Yes, your Honor. Each of the black
20 squared boxes is changed, your Honor we contend obviously. We
21 respect the fact that Biosig disagrees.

22 THE COURT: It would be useful to note that, the
23 respective intentions of the parties. That is going to be the
24 next step.

25 MR. GERINGER: We'll meet and confer and try to work

16r6bioc

1 out contentions.

2 THE COURT: We can accommodate you July 27th at
3 10:30 a.m. or July 28 at 2:30.

4 MR. MILCETIC: Either one of those dates are fine with
5 Biosig.

6 THE COURT: July 27th.

7 MR. GERINGER: Okay, your Honor. Shall we submit
8 written --

9 THE COURT: July 27 at 10:30.

10 MR. GERINGER: 27th?

11 THE COURT: July 27th, 10:30.

12 MR. GERINGER: Yes. Shall we make written submissions
13 on the 20th?

14 THE COURT: Yes.

15 MR. MILCETIC: That's fine.

16 MR. GERINGER: Those written submissions, your Honor,
17 would you like if we are able to get an approved chart to your
18 Honor --

19 THE COURT: Yes. Or even a little later. Are we
20 going to have joint submissions?

21 MR. GERINGER: The chart will be joint again, your
22 Honor.

23 THE COURT: How about your submissions?

24 MR. GERINGER: The 10 pages each was going to be --

25 MR. MILCETIC: Argument.

16r6bioc

1 THE COURT: So you want to do it at the same time?

2 MR. GERINGER: That's a good idea because it is
3 basically the contentions that we put in the chart.

4 MR. MILCETIC: So one date for making those
5 submissions and a subsequent date for opposition and responses.

6 MR. GERINGER: That will be fine.

7 THE COURT: And the second one should be short. I
8 think we have gone enough.

9 MR. GERINGER: Yes, your Honor.

10 THE COURT: Very good. We did this once earlier.

11 MR. GERINGER: Your Honor, may I propose July 13th
12 original submissions and rebuttal on the 20th?

13 THE COURT: Yes.

14 MR. GERINGER: 10 pages for originals and five or less
15 for replies.

16 THE COURT: Excellent. But don't play around with
17 five.

18 MR. GERINGER: You mean if I say five, I better mean
19 five?

20 THE COURT: Yes. Don't play around with margins. The
21 Second Circuit is 14.5, but 12 is okay.

22 MR. GERINGER: My prior experience is that if I
23 haven't made my point in 10 pages, I am having a bigger problem
24 than the length of my brief.

25 THE COURT: Right.

16r6bioc

1 MR. MILCETIC: To be clear, your Honor, on behalf of
2 Biosig, I think we'll be submitting a joint appendix as well.

3 MR. GERINGER: Yes, your Honor. We apologize in
4 advance, file histories is 800 pages.

5 THE COURT: It is not my first patent case. You can
6 use an appendix that is abbreviated. That is good.

7 MR. GERINGER: That would be very possible, your
8 Honor, because much of the appendix will not be at issue. We
9 can submit an abbreviated one and we'll agree on that with
10 Biosig and get it down to a couple hundred pages, which is
11 brief for this.

12 THE COURT: Good.

13 MR. GERINGER: Anything else, your Honor?

14 THE COURT: Have a good 4th of July.

15 MR. MILCETIC: Thank you, your Honor.

16 MR. GERINGER: Thank you, your Honor.

17 oo

18

19

20

21

22

23

24

25